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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,802	01/08/2007	Christopher James Philip Clements	M03B335	8740
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THE BOC GROUP, INC. 575 MOUNTAIN AVENUE MURRAY HILL, NJ 07974-2064			EXAMINER	
			MULLER, BRYAN R	
			ART UNIT	PAPER NUMBER
			3723	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,802

Applicant(s)

CLEMENTS ET AL.

Examiner

BRYAN R. MULLER

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 09 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 5/9/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for reciprocally moving that is arranged to rotate the shaft (claim 10) must be shown or the feature(s) canceled from the claim(s). There is no structure shown in the drawings or disclosed in the specification that provides the function of rotating the shaft while reciprocating. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 3, 4 and 18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Both of claims 3 and 18 only disclose a function, which appears to be a method step for using the apparatus being claimed. Thus, the claims do not provide any further **structure** to the apparatus. It is suggested that claims 3 and 18 be cancelled because claims 5 and 19 both effectively claim structure that will provide the same function as the applicant attempts to claim in claims 3 and 18, respectively. Further, claim 4 also fails to further limit the **structure** of the apparatus because the claim only discloses a gas that is intended to be used with the apparatus, but does not provide any further limitations regarding the actual structure of the apparatus.

3. Claims 13 and 14 are objected to because of the following informalities: as best understood by the Examiner, the "means for preventing particulates from being drawn in to the means for moving" in claim 12 is the same as the "means for scraping particulates from the shaft" in claim 13, which is the annular seal disclosed in claim 14. Thus, it appears as though the applicant is attempting to claim the same part with two different names/descriptions, which confuses the scope of the claim. Therefore, it is suggested by the Examiner that the applicant remove reference to either the "means for preventing particulates from being drawn in to the means for moving" or the "means for

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scraping particulates from the shaft” from either claim 12 or 13 and indicate in claim 14 that the annular seal is one or the other. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As discussed supra, the specification fails to discuss any structure for the “means for reciprocally moving” that provides the function of rotating the shaft to rotate the scraper. Thus, the applicant fails to provide sufficient disclosure to allow one of ordinary skill in the art to make or use the invention as claimed in claim 10.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As discussed supra, it is unclear how the applicant provides the “means for reciprocally moving” with the function of rotating the shaft.

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8. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

9. Applicant is advised that should claims 1 and/or 16 be found allowable, claims 15 and/or 17, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicates thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Claim 15 is a substantial duplicate of claim, the only difference being the intended use for an inlet pipe, but all of the claimed structure being substantially identical to claim 1. Additionally, claim 17 is considered to be a substantial duplicate of claim 16, again the method only varying in that the apparatus is provided to an inlet pipe, but all of the claimed method steps and corresponding structure otherwise being identical to claim 16.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 4, 6, 7-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (6,263,535) in view of Sweeney et al. (5,935,283) and Head (GB 2342372 A).

12. In reference to claims 1 and 15, Wang discloses an apparatus for reducing clogging of pipes that transmit gasses in fabricating processes, the apparatus comprising a body (20) having an open end (200) adapted to be detachably connected to an aperture of a pipe, a shaft (22) movable within the body, a scraper (21) attached to one end of the shaft, a mechanism for reciprocally moving the shaft to urge the scraper into the pipe to dislodge particles deposited within the pipe and to withdraw the scraper from the pipe. However, the mechanism for reciprocally moving the shaft disclosed by Wang is different than the structure disclosed by the applicant that is supported by the "means for reciprocally moving", assuming that 35 U.S.C. 112, sixth paragraph is invoked. Head discloses a similar apparatus for reducing clogging in a pipe that comprises a scraper and a mechanism to reciprocally move the scraper into or out of the pipe and Head teaches that the mechanism may be a piston to enable the scraper to be hydraulically or pneumatically driving inside the tube. Therefore, Head discloses that a known equivalent in the art to reciprocally move the scraper within the pipe is a hydraulic or pneumatic piston, which will provide the same function as the moving mechanism disclosed by Wang. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the moving mechanism

of Wang may be replaced by a hydraulic or pneumatic piston, being known equivalents in the art, as taught by Head, which is equivalent to the applicant's "means for reciprocally moving". Further, Wang fails to disclose an injecting means extending about the body for injecting heated gas into the body to inhibit particulate deposition. Sweeney discloses another apparatus for reducing clogging in pipes that transmit gases in fabricating processes and Sweeney teaches that it is desirable provide injecting means to inject heated, compressed gas into the pipes to prevent the gasses from condensing or sublimating and leaving deposits on the walls of the pipes. Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Wang with a similar injecting means (considered to be equivalent structure to the applicant's disclosed "injecting means"), as taught by Sweeney, to inject heated, compressed gas into the pipes during cleaning with the scraper to prevent the existing gasses from adding to deposits on the pipe walls and to prevent the deposits being removed by the scraper from re-adhering to the walls.

13. In reference to claim 2, Sweeney further discloses that the injecting means comprises an orifice (74) located on an inner surface of the body (7). Therefore, it further would have been obvious that the body of Wang will also comprise an orifice in the body when provided with the injecting means of Sweeney.

14. In reference to claim 4, as discussed supra, the gasses used in the apparatus are merely intended use of the apparatus, thus failing to further limit the structure. However, Sweeney does disclose that nitrogen may be used as the heated, compressed gas,

15. In reference to claims 6 and 7, Wang discloses that the scraper may have a plurality of bristles, which may be considered to be an open construction, but Wang fails to disclose that the scraper may comprise a helical coil. Head further discloses that the scraper (10) may be formed as a helical coil having sharp corners, also defining an open construction, to scrape the internal surfaces of the pipes and the structure will allow the scraper to stretch or compress as it is moved along the pipe to more effectively contact every portion of the pipe even if the pipe may have slightly different diameters.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the scraper of Wang may be replaced with the scraper taught by Head, having a helical coil and open construction to more effectively scrape the inside of the pipes.

16. In reference to claim 8, Wang and Head both fail to disclose what material the scraper is made from. However, Sweeney discloses that the injection pipe (70) that is positioned within the body and is exposed to the gasses within the pipe is preferably made of stainless steel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the scraper from stainless steel, as taught by Sweeney, and as a known material that is resistant to corrosion caused by gasses used within the pipes.

17. In reference to claims 9 and 10, as discussed supra, Head teaches that the "means for reciprocally moving" comprises a hydraulic or pneumatic piston, which will obviously move within a cylinder (known in the art as structure of hydraulic or pneumatic pistons) and it further would have been obvious that the piston would be attached to the

second end of the shaft to effectively move the scraper. Further, Head discloses that the piston may provide rotational movement to the scraper during operation.

18. In reference to claim 11, Wang further discloses that the apparatus has a first position wherein the scraper is fully withdrawn from the pipe (Fig. 2A) and is substantially contained within the body so as not to be exposed to gases within the pipe.

19. In reference to claims 16 and 17, the methods of reducing clogging in (inlet) pipes using the apparatus of Wang, Sweeney and Head, as discussed supra, would obviously include all of the method steps disclosed in claims 16 and 17.

20. Claims 3, 5, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (6,263,535) in view of Sweeney et al. (5,935,283) and Head (GB 2342372 A) as applied to claim 1 and further in view of Chang et al. (6,676,767).

21. In reference to claims 3, 5, 18 and 19, Sweeney further comprises heating means (76, 23 and 54; comprising electrical resistance heaters, stream tracing lines, heating jackets or other known heating means, at least one of these being equivalent to the applicant's "heating means") extending about the body for maintaining the temperature within the body. However, Sweeney fails to provide a specific temperature that is desirable but does teach that the temperature is determined by the vapor pressure of the particulate forming in the gasses passing through the pipes, one of the gases commonly being BCl_3 (boron trichloride; Col. 1, lines 48-58). Chang et al. discloses a similar apparatus for reducing clogging in pipes carrying gasses in fabricating processes, Chang also providing heating means to maintain the temperature

within the body of the apparatus. Chang also discloses that boron trichloride may be a commonly used gas (Col. 1, lines 31-42) and further teaches that temperatures between 100-150° C are preferable to prevent reactions causing particulate deposition on the pipe walls. Chang further discloses that a specifically desirable temperature is typically around 105° C (Col. 2, lines 15-19). Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the body of Wang with similar heating means that are capable of heating the gasses to be injected and for maintaining the temperature within the body within a range of 100-150° C, as taught by Chang, which falls within both of the ranges claimed in claims 3, 5, 18 and 19, thus anticipating the claimed ranges. Alternatively, even without the teachings of Chang, as discussed supra, Sweeney teaches that the temperature of the gas and interior of the body will directly effect the reactions of the gasses and particulate matter therein within the pipes, thus teaching that the temperature of the gas and internal body temperature are both result-effective variables. Further, the applicant fails to provide any specific *evidence* of criticality for the claimed temperature ranges of 50-200° C or 80-150° C. Therefore, in view of the disclosure of Sweeney, the claimed temperature ranges would have been obvious to one of ordinary skill in the art at the time the invention was made (see MPEP 2144.05, Section II).

22. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (6,263,535) in view of Sweeney et al. (5,935,283) and Head (GB 2342372 A) as applied to claim 1 and further in view Dhingra et al. (5,659,915).

23. In reference to claims 12-14, Wang, Sweeney and Head all fail to disclose an annular seal through which the shaft passes, that acts as a means for preventing particulates from being drawn into the means for reciprocally moving and as a scraping means for scraping particulates from the shaft during movement. Dhingra discloses an apparatus for reducing clogging in pipes carrying gasses in fabricating processes, the apparatus having a scraper (19) mounted on a reciprocating shaft (22) and a means for moving the shaft (28) and Dhingra teaches that a scraping means (23) may be provided around the shaft, which also acts as a seal, to remove any particulate from the shaft during movement to prevent any particulate from passing into the moving means. Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an annular seal to the apparatus of Wang, Sweeney and Head for the shaft to pass through, which will act as a means for preventing particulates from being drawn into the means for reciprocally moving and as scraping means for scraping particulate from the shaft during movement, as taught by Dhingra, to prevent any particulate from passing into the moving means, which may cause damage, and to prevent build up of particulate matter on the shaft.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hirth et al (4,986,347) and Lu et al. (5,966,767) both discloses apparatuses for preventing clogging in pipes that have at least some similar structure and function as the applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN R. MULLER whose telephone number is (571)272-4489. The examiner can normally be reached on Monday thru Thursday and second Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J. Hail III can be reached on (571) 272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bryan R Muller/
Examiner, Art Unit 3723
5/23/2008